

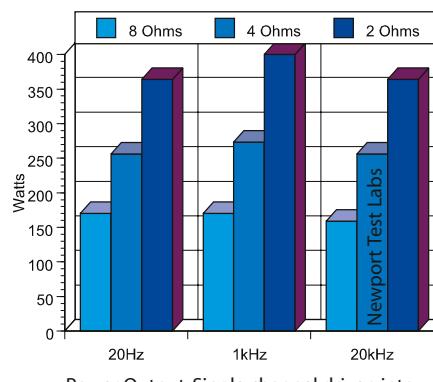


Marantz PM-11S3

INTEGRATED AMPLIFIER

There's nothing like taking a good product and making it better, and if anyone should know how to do this it's Marantz, because Marantz has been doing this very successfully for the 61 years it has been in business (the ownership of the company has changed a few times over the six decades, but the brand is the same). The latest product to benefit from a Marantz 'facelift' is the long-running PM-11S amplifier design, now in its third generation (hence the '3' at the end).

What's changed? One major change involves usability, because you can now use the PM-11S3 in conjunction with Marantz's Remote App (available for both iOS and



Power Output: Single channel driven into 8-ohm, 4-ohm and 2-ohm non-inductive loads at 20Hz, 1kHz and 20kHz. [PM-11S3]

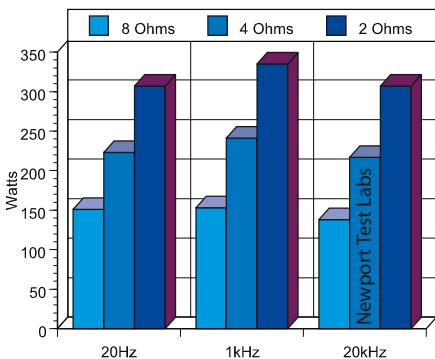
Android) via the Marantz control bus with Marantz's new Network player. There's now a power-amp direct input, new heavy-duty copper speaker terminals and, internally, updated versions of Marantz's Current Feedback HDAM SA3 modules.

What hasn't changed? That would be the triple-stage construction (preamplifier, dual power amplifiers, plus phono preamp—MM/MC), oversized toroidal power transformer, symmetrical circuit layout, Shottky diodes, choke power supply filtering and high power output capability, even into extremely low-impedance loudspeaker loads. And you've got to love that copper-plated chassis, which looks absolutely superb...

THE EQUIPMENT

As you can see for yourself, the front panel design of the PM-11S3 is perfectly symmetrical, perhaps reflecting the concept of the perfectly symmetrically circuit layout within... but I suspect just to satisfy someone somewhat higher-up in the corporate pecking order than the head of Marantz's design team. (I often wonder what goes on in meetings about control layout. If the electrical engineers allocate only seven 'user' buttons, do the designers go back and ask them to include another circuit, so they can have eight buttons, to allow them to put four down each side? Or in a case where the engineers want nine buttons on the front panel, does the design team make them take one away or... more likely, make that function only accessible via the remote control?)

In the case of the Marantz PM-11S3 I suspect I am speculating spectacularly idly, because despite the symmetrical layout,

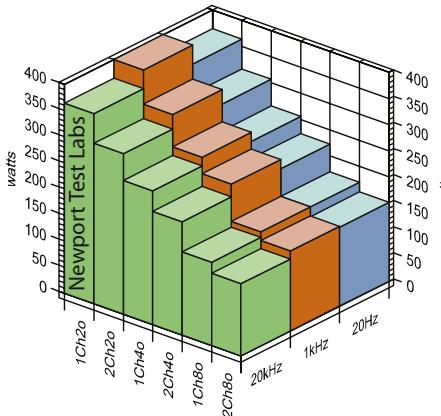


Power Output: Both channels driven into 8-ohm, 4-ohm and 2-ohm non-inductive loads at 20Hz, 1kHz and 20kHz. [PM-11S3]

there seemed to be no superfluous switches, nor any desirable controls missing... though the bass and treble tone controls—and the balance control—which are nearly always fixtures on amplifier front panels, were conspicuously absent, and instead needed to be invoked by using buttons on the remote control.

The lighting is also beautiful, so a lot of thought has gone into this as well, but it's fairly bright... presumably to make the PM-11S3 stand out in a hi-fi store. There is no facility for dimming the front-panel lighting, but you can certainly turn it off if you like, by pressing and holding (for more than two seconds) the 'Display' button on the front panel.

The fact that the PM-11S3 not only has a phono stage, but one that accommodates both moving-magnet (MM) and moving-coil (MC) phono cartridges shows that Marantz is



Power Output: Single and both channels driven into 8-ohm, 4-ohm and 2-ohm non-inductive loads at 20Hz, 1kHz and 20kHz. [PM-11S3]

one of those companies that still holds the LP in high esteem as a music source. So much so that Marantz one of the few large multinational companies that is still selling turntables. Some of these are made for it by other companies (ones that specialise in building turntables) but I understand that other turntables in its range are made in Japan by Marantz itself. No doubt Marantz has also been keeping a weather eye on the turntable market, and has noted (along with everyone else!) that sales of both LPs and turntables are on the rise...to the extent that in the United Kingdom, sales of LP records in 2013 doubled that of 2012, and overall, more LPs were sold in 2013 than were sold back in 2001!

Significantly, according to the British Phonograph Industry, 35.3 per cent of vinyl buyers in the UK in 2013 were under 35 years of age. No doubt the rise is also due to an excellent incentive offered by some record companies (and Amazon), whereby if you buy an LP, you get a 'rip' of the LP for free.

Although the PM-11S has MM/MC circuitry, you should note that there's only a single phono input, which is switched between MM and MC, so you can't connect two turntables at the same time, with different phono cartridges, and switch between them.

As noted earlier, the PM-11S3 has both 'pre-out' and 'main-in' facilities, so you can use the unit as a pre-amp and send a line-level signal out to an external power amplifier, or you can use an external preamplifier and use the PM-11S3's power amplifier to drive your speakers. However you cannot do both at the same time: you have to use the PM-11S3 either as an integrated amplifier only, a pre-amp only or as a power amp only. Although this is unlikely to be limiting, there are one or two (admittedly fairly esoteric!) applica-

tions where it would be useful to be able to separate the pre- and power sections electronically and use them individually. Perhaps on the PM-11S4?

The instruction manual supplied with the PM-11S3 is high quality and the instructions are for the most part excellent, though the same cannot be said for the instruction manual's index, where instead of Volume adjustment being under 'V', Tone Controls under 'T' and Standby under 'S', as you'd expect, all three are listed under 'A' for Adjust. Mmmmm. Can we blame Microsoft's indexing function for this, or someone at Marantz?

In common with many modern hi-fi components, Marantz has built automatic standby circuitry into the PM-11S3, whereby if no music has been playing for at least 30

MARANTZ PM-11S3 INTEGRATED AMPLIFIER

Brand: Marantz
Model: PM-11S3
Category: Integrated Amplifier
RRP: \$9,560
Warranty: Three Years
Distributor: Qualifi Pty Ltd
Address: 24 Lionel Road
 Mt Waverley VIC 3149
Phone: 1800 242 426
Phone: (03) 8542 1111
Email: info@qualifi.com.au
Website: www.qualifi.com.au

• High power
 • Very low distortion
 • Bulletproof build quality

• Bright lights
 • Owner's manual

LAB REPORT

Readers interested in a full technical appraisal of the performance of the Marantz PM-11S3 Integrated Amplifier should continue on and read the LABORATORY REPORT published on page 48. Readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.



Lab Report on page 48



minutes, the unit will automatically turn itself off. If this is too 'Big Brother' for your liking, or you have a specific application in mind that requires the unit to be constantly powered-up, you can defeat this circuit by holding down the 'Tone' button continuously for more than five seconds. (Pressing the front panel 'Tone' button for briefer periods merely toggles the tone circuitry on and off... or, if you prefer, between 'Defeat' and 'Active'.)

As well as the automatic standby circuit, the PM-11S3 also has full-featured protection circuitry to guard against overheating, short-circuits, dangerously low impedances, d.c. at the input and so on. However, try as I might, I could not get the protection to trigger, even when using multiple paralleled loudspeakers and playing bass-heavy riffs at very high volume levels, so I think you can be certain that the circuit will not trigger prematurely... only when you *really* need it to.

The rear panel is a copper-plated masterpiece, with gold-plated RCA connectors used for all line-level inputs and outputs, except for the two balanced inputs which are female XLR types, but also gold plated. Even the turntable ground post is gold-plated. The speaker terminals are extremely high quality. One significant point to note is that 'country of origin' stamp at the bottom right of the rear panel because you'll see that, as with all Marantz's high-end products, the PM-11S3 is built entirely in the company's own factory in Japan. Note also that the PM-11S3 is double-insulated: not only for your personal

safety, but also to ensure that there's no chance of any mains hum caused by earth-loop issues when you connect your other components to the amplifier.

IN USE AND LISTENING SESSIONS

When I fired the Marantz PM-11S3 up, I was a little perplexed to see in the central window the letters 'ID 0' and wondered if I'd skipped some essential stage when setting up the amplifier. It turned out that if you use Marantz's FCBS (Floating Control Bus System) system to link multiple PM-11S3 amplifiers together, you need to allocate each one its own unique ID number. One unit has to be designated the 'Master' unit (1) and the other units (known as 'Slaves') each have to be allocated their own ID number (IDs 2-4) so the FCBS system can distinguish between them. After you've set this up, you can link control operations such as input selection, volume control, muting, display status, tone control, and so on, which is particularly useful if you're bi-ampling, though the obvious application is for multi-channel sound. One very neat feature of using FCBS to connect multiple PM-11S3s is that you can switch the amplifier's output to mono if you wish, which is great for fault-finding, room acoustics investigations and so on. However, since I was using only a single PM-11S3, I didn't have to change the number or, in fact, do anything at all for the amplifier to operate perfectly at switch-on... and neither will you.

Once fired up, you select your preferred input using the left-most rotary control (the Source selector). From left to right, the source selection available is: CD, Line-1, Line-2, Rec-1, Rec-2, MM (or MC depending on the setting of the MM/MC button), and Balanced. (All these are shown via LCD in the central display window, but abbreviated to CD, L1, L2, Rec1, Rec2, MM and Bal.) I discovered what I thought was an oddity with the source selector, which is that if you have the attenuation switched on (about which more in the next paragraph), switching the source selector one 'click' either way does not change the source, but instead simply switches off the attenuator—the source itself does not change. I guess there's a good reason behind this, in that it alerts you to the fact that the attenuator was active (otherwise you could accidentally 'blast' your speakers by switching to an active source at high volume) but it nonetheless seemed odd to me.

As for the attenuation circuit (a.k.a. muting circuit) itself, it's very clever indeed! Not only can you attenuate the signal, you can select between three levels of attenuation: 20dB (the default), 40dB and 'Infinite.' Interestingly, you have to use the front panel attenuation button to preset the level of attenuation, after which you use the remote control to activate or deactivate it (or the source selector, as noted).

The volume control appears to be a standard rotary type, but it's not, it's electronic, using a 6116 IC from Micro Audio Systems in order to allow precise level adjustments to

be made across the range of 0dB to -100dB in tiny (0.5dB) steps. Curiously, at minimum volume the central display first shows 'minus infinity', then switches to show 'MIN' before finally settling on showing '-100dB', while at the opposite extreme, it shows 'MAX' before reverting to show '0dB.' I can only assume the engineers had fun programming these sequences!

Turn the volume control clockwise and you'll immediately hear that the Marantz PM-11S3 is a powerhouse of an amplifier—and that's even if your speakers are extraordinarily inefficient. The amount of amplifier power on tap is truly impressive... so impressive that I cannot imagine anyone needing any more power than the PM-11S3 can deliver, even if it's being used in a room of well-above-average dimensions. It's not just the overall power on tap, it's also the fact that even if you're playing at excessively high volume levels, the sound of the amplifier is just as dynamic as it is at whisper-quiet replay levels, in that when a transient arrives, it's delivered perfectly, at 'way above the average volume level, with no compression, no hesitation, and without 'sucking out' the musical information immediately before and after the transient.

Perhaps even more impressive than the sheer power is the cleanliness and clarity of that power. There's none of the artificial warmth of a valve amplifier, nor the artificially simulated warmth of a MOSFET amplifier, nor the 'here and there' sound of a Class-D amplifier, nor the steely hardness of a poorly-designed bipolar amplifier. There's just an outpouring of clean, beautifully articulated music, as if it were bursting forth from the instruments themselves, except highly amplified. Did someone say 'straight wire with gain'? If not, it would be a highly accurate description of what's going on inside the Marantz PM-11S3.

All this power and precision would be for naught if the amplifier were not quiet,

and the PM-11S3 is certainly this, because when the music stops, you'll hear absolutely nothing from your speakers. No faint hiss, no background hum, not even a 'blackness' that might indicate a total absence of sound. Instead, you won't hear anything except the background noise of your own listening room. No doubt it's this silence that contributes to the dynamics, so that not only are the differences between loud and soft notes clearly delineated, but also the differences between soft notes and no notes at all. It's a type of silence that I don't think amplifiers with on-board DACs can equal.

All of this makes the PM-11S3 a very revealing amplifier, one that will reward you beyond measure if you feed it truly hi-res source material, but one that's superbly revealing if you feed it well-recorded 16-bit/44.1kHz fare direct from CD. One such is a favourite recording of mine, as well as a favourite of the late Chris Green, previous assistant editor—and reviewer—here at Australian Hi-Fi Magazine, who was a huge Cyndi Boste fan. I'm talking about her 2004 album 'Scrambled Eggs' (Rose St Sessions), mostly recorded in her own home direct to DAT by Rob Harwood, and featuring Linda and Vika Bull, Dave Steel, Tiffany Eckhart, Garrett Costigan and a clutch of other musical luminaries.

Scrambled Eggs is at heart a collection of Boste's favourite songs written by her friends, most of whom contribute to this album, and it's a beautiful album on so many levels. The songs themselves, of course, but there's the obvious love with which they're played... you can hear instantly that this is truly music-making, in every sense of the words, as if they're playing not simply to 'make an album' but to honour the music itself. Then there's the recording, which is an object lesson into why music should not be overproduced: the sound on this CD is so clean and natural that the musicians could be playing in your home live, not issuing through your

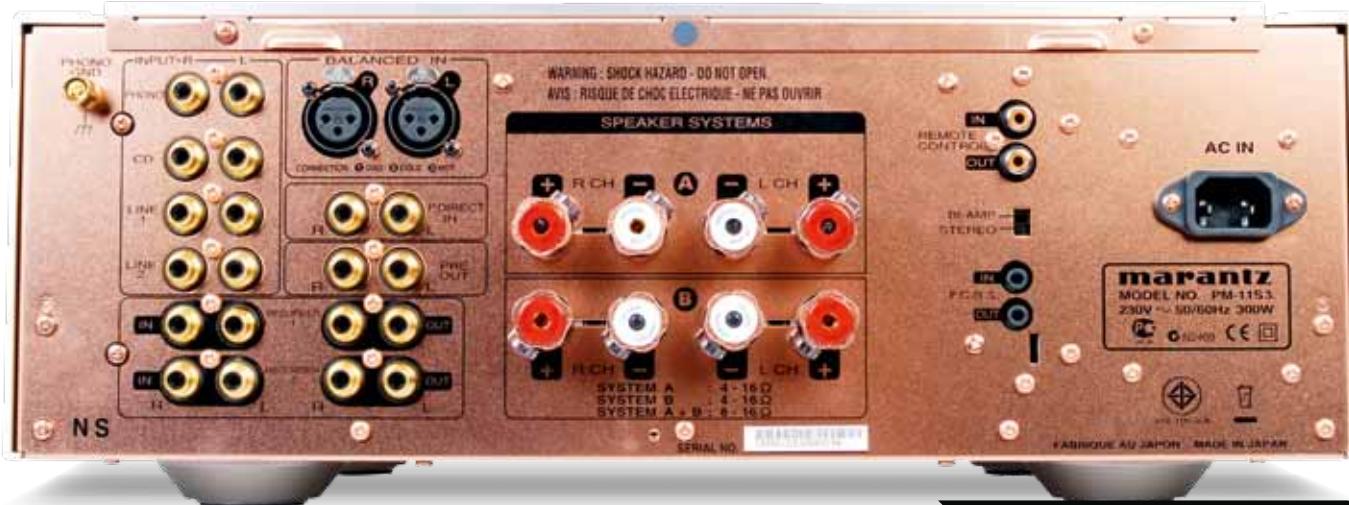
speakers. Yes, there are some rough edges, some unwanted rattles and distortions (on *Bridges* especially), and many fluctuations in level, but if anything, these all just add to the undeniable authenticity of the sound.

And wait until you hear one of the three Boste originals on this album. She does a completely new take on *No Way Out* (originally on her album 'Home Truths'), and for mine, this is the definitive version, by a long shot. It's gorgeous. (The other two tracks were recorded live at the Port Pirie folk festival, and I prefer the versions she recorded at Fatsound that can be heard on 'Push Comes to Shove', in terms of both sound quality and performance.) Make a point of buying *Scrambled Eggs*: you'll love the singers and love their songs.

Amplifier/speaker matching is a sore point with many audiophiles, particularly those who find that their newly-purchased speakers aren't a great match for their amplifier, or that their newly-purchased amplifier doesn't turn out to be a synergistic match with their existing loudspeakers. You won't have to worry about amplifier/speaker matching if you buy the Marantz PM-11S3, because I found it worked perfectly with all the speakers I tried it with, and some of them were famously difficult. In essence, the amplifier's sound was transparent to the speakers: I was hearing the intrinsic sound of the speakers themselves, not the combination of both. This is significant, because for many people, I'd bet that the PM-11S3 will be the very last amplifier they buy!

CONCLUSION

This amplifier does so many things right that it's almost as if the designers had a tick-box from an audiophile's wish list and worked away until they'd ticked all the boxes. Yes, it has a few little quirks, but if anything, I think these actually add to the Marantz PM-11S3's desirability. This is an amplifier that will, truly, 'knock your socks off.'  **greg borrowman**



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LABORATORY TEST RESULTS

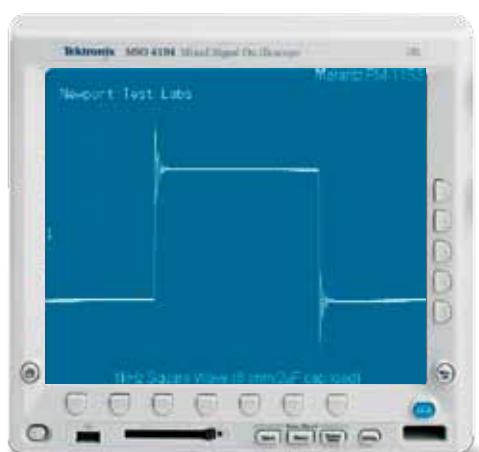
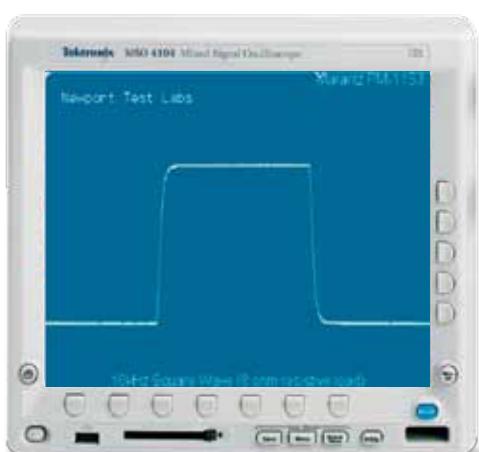
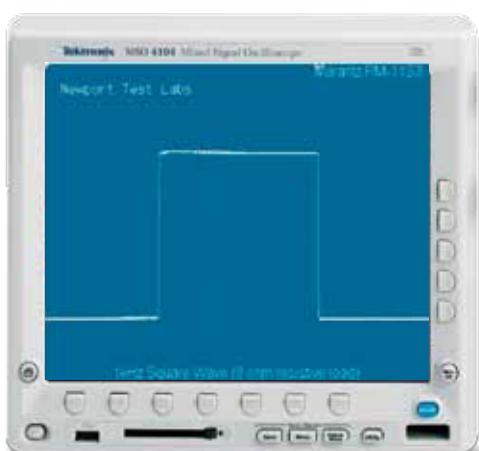
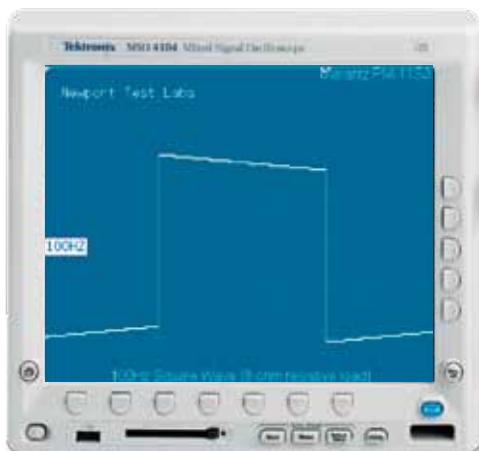
As you can see from the tabulated power output figures, and the bar graphs generated using those figures, the Marantz PM-11S3 very easily exceeds its specified output of 100-watts per channel into 8Ω loads and 200-watts per channel into 4Ω load. At 1kHz, both channels driven, *Newport Test Labs* measured the power output of its test sample as being 153-watts per channel into 8Ω and 241-watts per channel into 4Ω . Into 2Ω (for which the PM-11S3 is not rated) it delivered 335-watts per channel. The fact that the power supply is unregulated, and will thus ensure greater 'peak' power figures is made obvious by the increase in power output looking at the single-channel figures, with the Marantz PM-11S3 delivering 170-watts (8Ω), 273-watts (4Ω) and 400-watts (2Ω) respectively. And unlike some amplifiers, the Marantz produces considerable power levels at the frequency extremes of 20Hz and 20kHz.

Marantz has not restricted the frequency response of the PM-11S3 either, with the amplifier returning a very wideband -3dB response of 3Hz to 177kHz. The normalised response is 5Hz to 91kHz $\pm 0.5\text{dB}$. Over the audio band, the response is even flatter, as you can see from Graph 6, where the black trace showing frequency response is around 0.1dB down at 20Hz and 20kHz so, normalised, the measurement is 20Hz–20kHz

$\pm 0.05\text{dB}$. Furthermore, this response is true both when the amplifier was driving a non-inductive laboratory test load (the black trace on Graph 6) and when it was driving a load that simulates that of a two-way bookshelf loudspeaker (the red trace on Graph 6). Even into this real-world load, the Marantz PM-11S3's frequency response is still 20Hz–20kHz $\pm 0.05\text{dB}$.

Channel separation (tabulated, but not graphed) was excellent, measuring 81dB at 20Hz, 100dB at 1kHz and 115dB at 20kHz. All three figures are above reproach, and far more than will be required to ensure adequate separation and perfect stereo imaging. The same is true of the balance between the channels (0.15dB) and the interchannel phase errors. At and below 1kHz, the phase error is tiny, while even the 1.23° error at 20kHz would never be perceptible, even with program material selected specifically to highlight it.

Distortion was superlatively low, with *Newport Test Labs* measuring overall THD+N figures of 0.005% referred to one-watt and 0.003% referred to rated output. Basically, this is so low as to be completely imperceptible to the human ear. However, even if you could hear some of the distortion, you'd hear 'good' distortion because looking at the spectrum analyses of the output signal (Graphs 1 through 4), the only 'significant'



Marantz PM-11S3 Amplifier — Power Output Test Results

Channel	Load (Ω)	20Hz (watts)	20Hz (dBW)	1kHz (watts)	1kHz (dBW)	20kHz (watts)	20kHz (dBW)
1	8Ω	170	22.3	170	22.3	159	22.0
2	8Ω	151	21.8	153	21.8	138	21.4
1	4Ω	256	24.1	273	24.4	256	24.1
2	4Ω	223	23.5	241	23.8	217	23.4
1	2Ω	364	25.6	400	26.0	364	25.6
2	2Ω	307	24.9	335	25.2	307	24.9

Note: Figures in the dBW column represent output level in decibels referred to one watt output.

Marantz PM-11S3 Integrated Amplifier — Lab Test Results

Test	Measured Result	Units/Comment
Frequency Response @ 1 watt o/p	5Hz – 91kHz	-1dB
Frequency Response @ 1 watt o/p	3Hz – 177kHz	-3dB
Channel Separation (dB)	81dB / 100dB / 115dB	(20Hz / 1kHz / 20kHz)
Channel Balance	0.15	dB @ 1kHz
Interchannel Phase	0.06 / 0.06 / 1.23	degrees (20Hz / 1kHz / 20kHz)
THD+N	0.005% / 0.003%	@ 1-watt / @ rated output
Signal-to-Noise (unweighted/weighted)	85dB / 91dB	dB referred to 1-watt output
Signal-to-Noise (unweighted/weighted)	91dB / 97dB	dB referred to rated output
Input Sensitivity (CD Input)	25mV / 245mV	(1-watt / rated output)
Input Sensitivity (Balanced Input)	49mV / 490mV	
Output Impedance	0.04 Ω	$\text{OC} = \text{V}$
Damping Factor	200	@1kHz
Power Consumption	0.25 / 45.6	watts (Standby / On)
Power Consumption	73.2 / 428	watts at 1-watt / at rated output
Mains Voltage Variation during Test	239 – 250	Minimum – Maximum

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harmonic distortion component is the second harmonic (HDL²), which is 'good-sounding' because it's the musical octave of the fundamental. (So instead of one 'D' being played, for example, it's as if you played both the 'D' and the 'D' the octave above.) However, even though the second harmonic is the only significant distortion component, it's still 95dB (0.0017%) down at 1-watt when driving either 8Ω or 4Ω loads, and 85dB (0.0056%) down at 100-watts when driving those same two loads. As for those higher-order harmonic distortion components you can see on these graphs (the small 'spikes' rising above the noise floor), these are mostly at or below either -110dB (0.0003%) or -120dB (0.0001%).

Since I have mentioned the noise floor, let's look at it in Graphs 1 and 3. You can see that it's most sitting down around 130dB down referred to 1-watt, and nearly -140dB referred to rated output. Also note that at the extreme left of each graph, a signal (probably at 50Hz) is more than 100dB down in both cases, which is excellent. As for the wide-band noise figures, *Newport Test Labs* measured them at 85dB unweighted referred to one-watt output (increasing to 91dB with weighting) and 91dB unweighted referred to 100-watts, increasing to 97dB with A-weighting. These are vanishingly low levels of noise, probably helped by Marantz using choke-input filters, which are more effective at filtering out the RF noise that is now present on all mains power lines. (And the way chokes operate which means they're continually storing energy in their magnetic fields that is slowly released to the capacitors,

so that there is a continuous charging current, probably helped kick the power output figures along.)

Tone control action was quite unusual, more like a two-band parametric equaliser, with centre frequencies at 45Hz and 30kHz, that offers boost and cut of around 8.5dB. As you can see (Graph 7) there's no shelving at all, but there doesn't really need to be, since the controls' effect at very low and very high frequencies is self-limiting, so you can't get either excessive bass boost or excessive treble boost. Overall, I'd suspect that in operation, the effect of the bass and treble controls on the music will be far more subtle than if a Baxandall contour were used. So if you're normally hesitant about using bass and treble controls, try the ones fitted to the PM-11S3—you might be in for a pleasant surprise.

On Graph 7 you can see not only the 'reference' frequency response with the tone controls 'in circuit' (the black trace) but also the frequency response when the tone controls are switched out of circuit (the red trace).

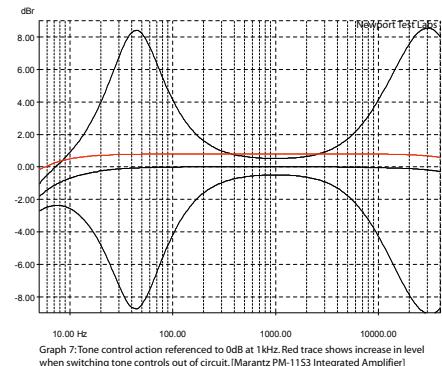
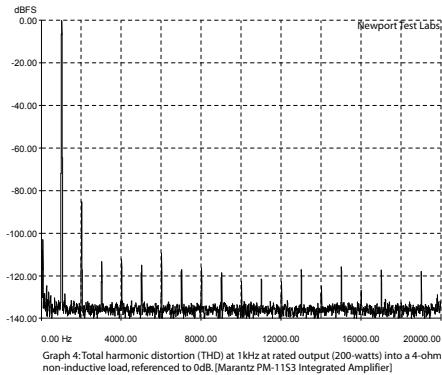
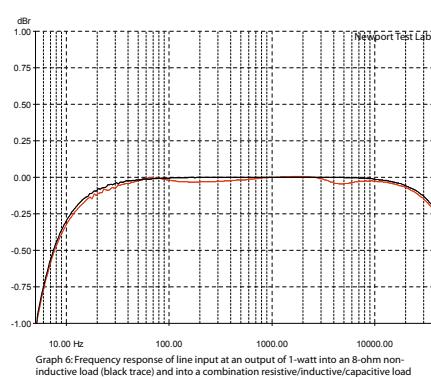
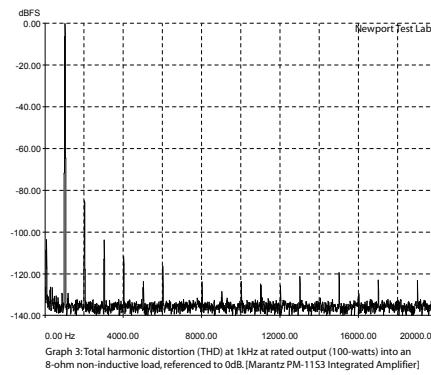
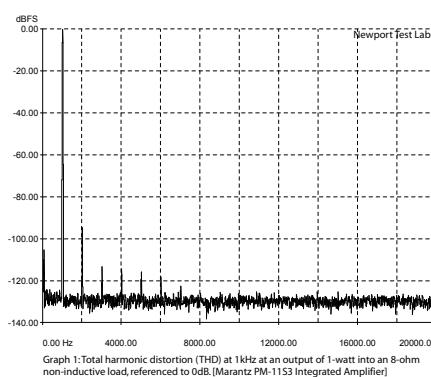
You can see there's an overall 1.6dB increase in volume when you switch the tone controls out of circuit, which is sufficient that the sound of the amplifier will appear to 'improve' when the tone controls are switched out, and *vice versa* when they're switched in, even if the bass and treble tone controls are set to 0dB. In reality, there's no actual 'improvement' as such, it's just a trick of human hearing, which always prefers the louder of two otherwise identical sounds.

The Marantz PM-11S3 has a low output impedance (measured by *Newport Test Labs* as being 0.04Ω at 1kHz), which means a high damping factor (200), which in turn means that this amplifier will be able to keep a firm grip on even the most compliant bass driver, and its frequency response will not vary with variations in a loudspeaker's impedance.

Square wave testing showed the amplifier's response does not extend to d.c. and that there's very little phase shift at low frequencies. The 1kHz square wave is almost perfect, an excellent result, as is the 10kHz square wave, which shows a very fast rise-time and only minor rounding on the leading edge. Loaded down with a highly capacitive load (2μF paralleled with 8Ω) there is a small amount of ringing, but it's quickly damped and always entirely under control, proving that this amplifier will be stable even into highly reactive loads... such as electrostatic speakers.

Judging by the results measured by *Newport Test Labs* during its testing procedures, it's my opinion that this is a very well-designed amplifier, and one where the design has also been well-executed in production. My congratulations to both teams. 

Steve Holding



Graph 6: Frequency response of line input at an output of 1-watt into an 8-ohm non-inductive load (black trace) and into a combination resistive/inductive/capacitive load representative of a typical two-way loudspeaker system (red trace). [Marantz PM-11S3 Integrated Amplifier]

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